

# UNITED STATES FERTO CORPORATION

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REPORT ON MINING PROPERTY LOCATED IN  
SANPETE COUNTY, 1 1/2 MILES EAST OF  
MILBURN. PREPARED BY THE OPERATORS OF  
UNITED STATES FERTO CORPORATION.



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## INTRODUCTION

This report and study has been completed by United States Ferto Corporation with the help of various outside people and agencies. Its purpose is to outline the past, present and future operation on mining claims located in Manti LaSal National Forest, Sanpete County. The report is built around mineral deposits and outlines work that has been completed to date with a look to the future. It further shows the method of mining being conducted and outlines such items as water runoff, road construction and reclamation of the mine area.

The area of the subject mine contains a number of valuable minerals which are being explored for extraction and future marketing. The majority of ore is being used for agricultural purposes to help build farm soils suffering from humus and mineral deficiency. It should be noted that there is much concern throughout various agencies with agriculture production as thousands of acres each year go out of food production because of humus and mineral deficiency. It has therefore been determined that the best use of the mineral ore at this time is for agriculture.

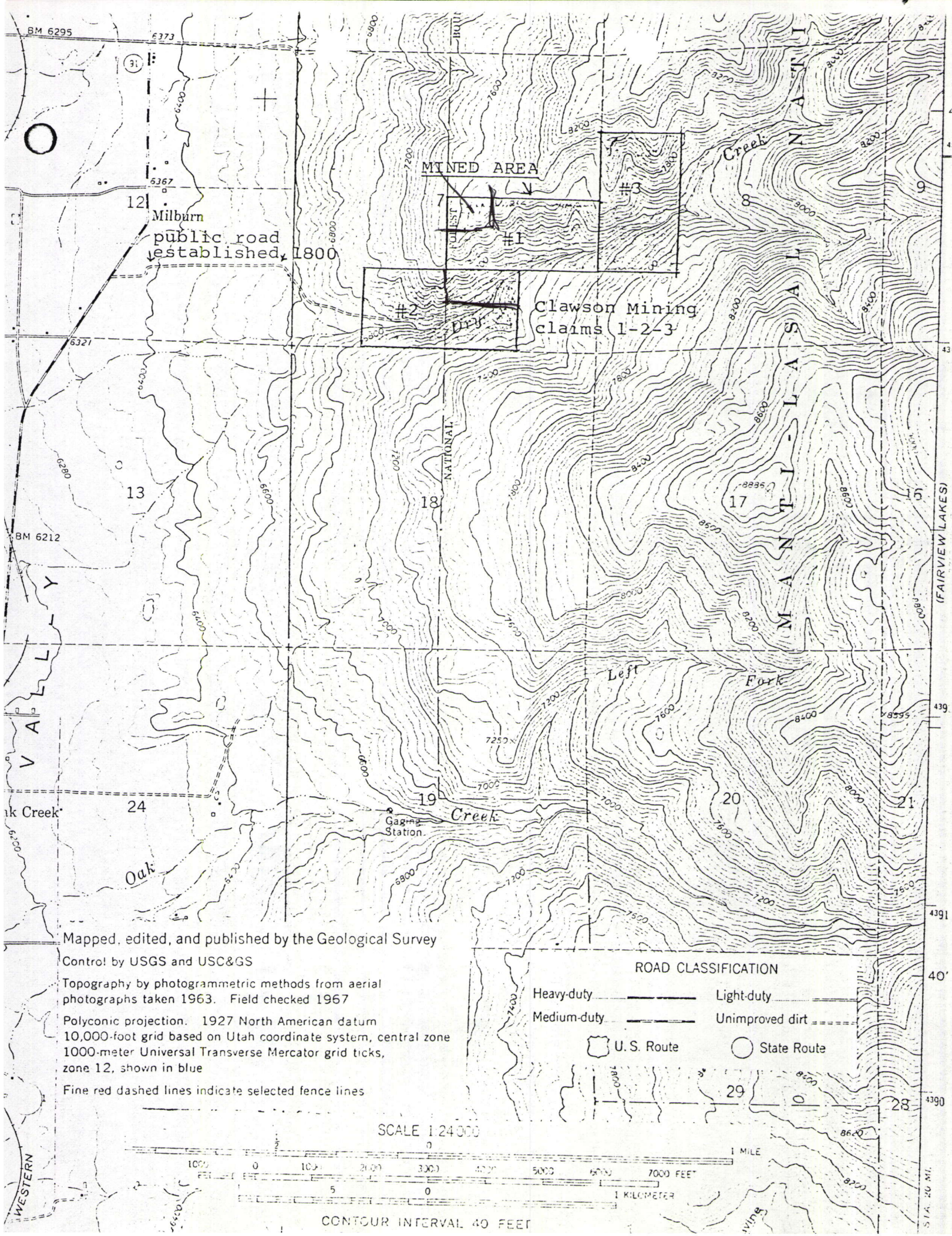
The present owners of the mining claims and U. S. Ferto Corporation operators have centered their attention on improving the entire general area. There has been extensive work completed to improve the condition of the mined and unmined area such as roads, fences, water drainage, eroded areas and landscape. This same concern is built into each years mining program both present and future.



### LEGAL DESCRIPTION

This report pertains to mining property located in sections 7 & 8, Township 13, South, Range 5 East, SLB and M which is approximately 2.2 miles east of Milburn, central area of Utah. The property consists of three placer mining claims each of 80 acres making a total of 240 acres. The property is located on the north slope of the east-west oriented canyon except for the most eastern part which includes a small portion of the north slope of the south-west canyon.  
(see map page)







### GEOLOGIST SUMMARY

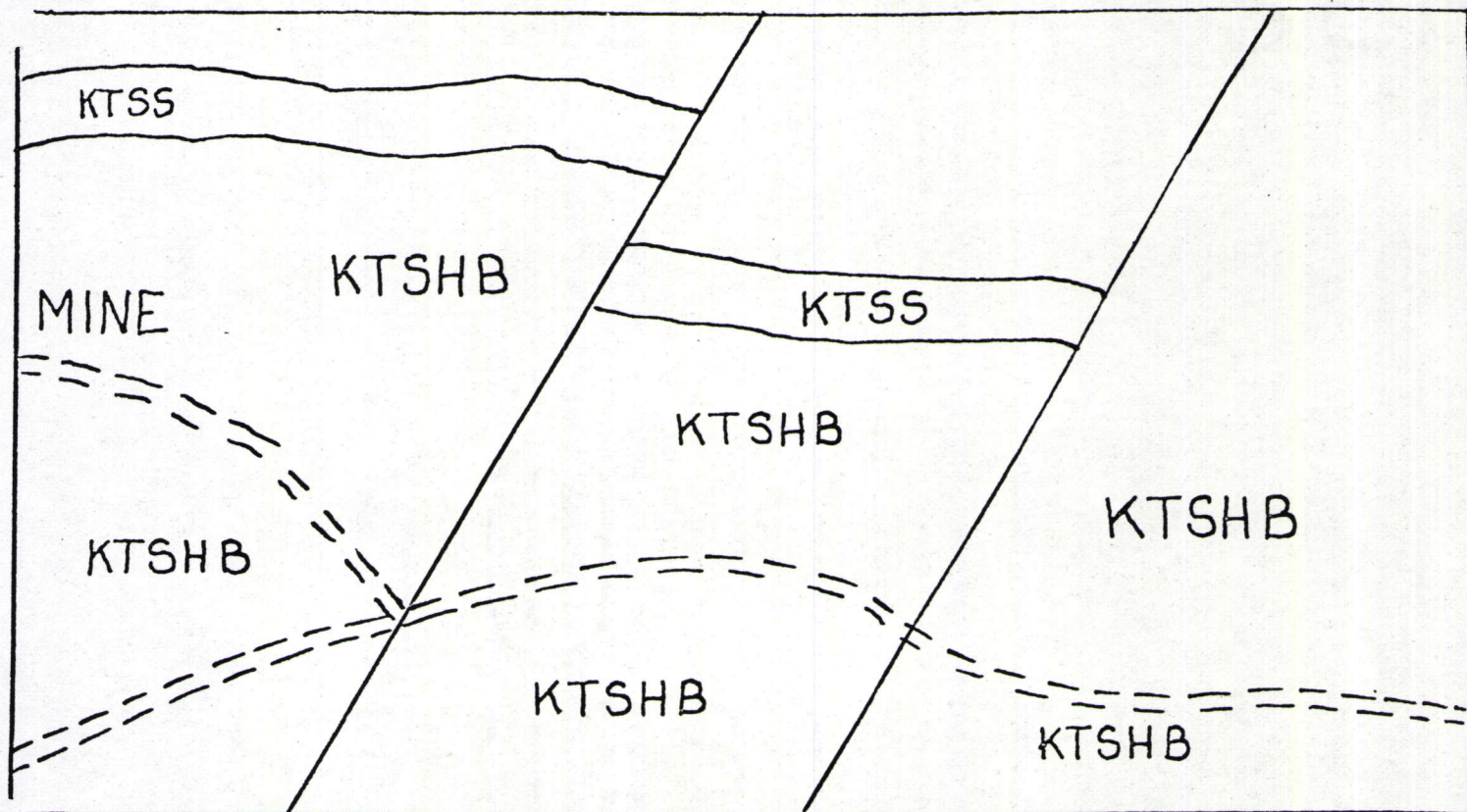
The present owners and U. S. Ferto Corporation obtained the services of two geologists from B. Y. U., Mr. Clyde Davis and Mr. Jack Madsen, who completed a report on the entire mineral area. They define the general geology as the top of or near the top on the west slope of the Sanpete Monocline. The dip and strike of the bedding is generally west and north west and dip to the north 2 to 10 degrees. The surface geology of the property is a mineral shale facies of the north horn formation which is upper cretaceous in age and equivalent to the wasatch formation in eastern Utah.

The overburden consists of sandstone, conglomerated with some areas of fresh water limestone. The ore is a dark carbonaceous shale which is faulted. There are numerous outcropping of the shale material and open pit mining is recommended.

The estimated tonnage on the surface is 6,812,500 tons and would increase to over 10,666,000 tons by removing the small layer of overburden. These amounts are calculated from the ore outcrop. To estimate the total tonnage it would be necessary to block drill the entire area.

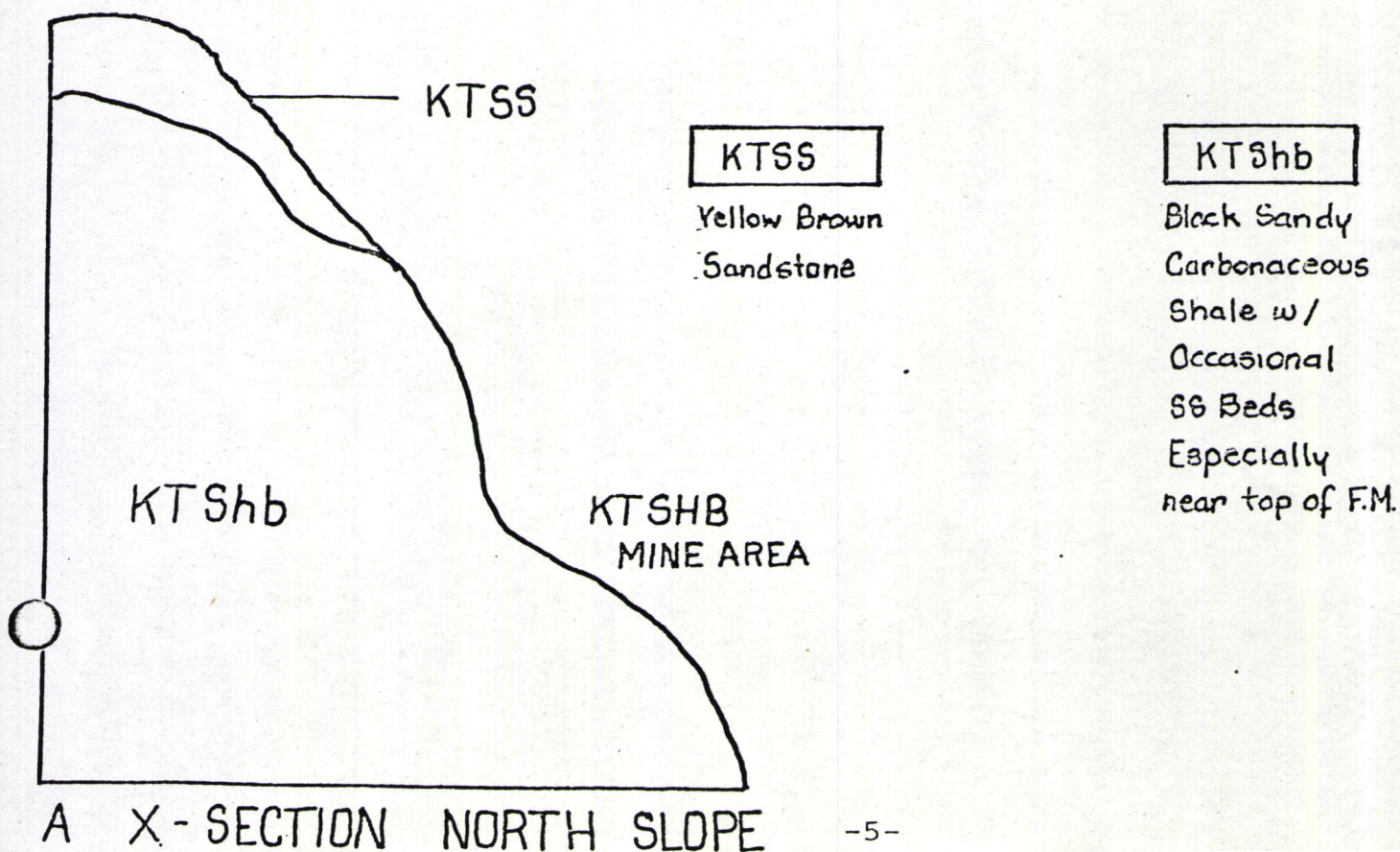


FIG. A



SKETCH GEOLOGIC MAP

SCALE: APPROX. 1"=450'





## MINERAL DEPOSITS

The mineral deposit was discovered sometime in the early 1900's and two shafts were sunk. One shaft at the lower level and one at the west upper level. There was periodic activity on these shafts until 1955 when open pit mining began and mining claim records kept. The claims were worked each year on a limited basis until 1972 when the present owners began extensive improvement work on the claims. The mineral from the deposit contains a number of valuable minerals that have been extracted and sold over the years. In 1960, Mr. Davis, a professor at Brigham Young University, began research of the mineral as an animal mineral food supplement. He also researched the mineral as a humate and mineral supplement for farm soils and fertilizer blends. The research resulted in the use of the mineral as both an animal and agriculture fertilizer supplement. In 1971 the present owners conducted further research of the mineral ore to determine its best use. A number of outside independent people were consulted and one of these companies reports is a part of this report. It was determined that the best productive use of the mineral ore was agriculture.

In 1971, a corporation was founded under the name of United States Ferto Corporation and with the help of Government funds, they proceeded with the mineral as a farm mineral supplement for agriculture programs. A great deal of expense and further research went into the development of the mined mineral for use by the agriculture people. The mineral is registered in a number of states and controlled by various regulatory agencies of these states as a farm mineral supplement and fertilizer mineral blend for agriculture. It is also registered with the United States Government Mining Commission in Washington, D. C.



## BEST USE OF MINERAL

The best use of the mineral has been determined to be for agriculture. There are a number of valuable minerals in the ore that includes silver, zinc, tungsten, copper, iron, cobalt, manganese with possibilities of gold, uranium and mercury. The ore is also rich in humus (organic matter), humic acid and other types of soil plant nutrients. A great deal of research has been done with the ore for agricultural purposes. The work was started in the 1950's at B. Y. U. by Dr. Davis and continued until his death. In 1970, the present owners took up where Dr. Davis left off and today there are experimental areas in Utah, Arizona, California, Oklahoma and Oregon. The test conducted by Dr. Davis and other independent agencies has definitely proven that the best use of the ore at this time is for agriculture. There are numerous soil problems coming to light and these problems are affecting the production of food throughout the U. S. A. and other countries. The use of the ore after it has been processed properly and blended with other soil nutrients has and is correcting these problems. It has been determined by a number of Universities and independent researchers that the U. S. A. could face drastic food reductions if the soil problems are not corrected. The present owners of the claims believe that the mined minerals should be put to their best productive use. There is some research being conducted to determine the cost and time involved to extract some of the other valuable minerals that do not concern agriculture.



LAB REPORT ON ORE

By

AMERICAN CHEMICAL & RESEARCH LABORATORIES

1972 - 1977



GEOCHEMICAL EXPLORATION  
POLLUTION ANALYSIS (UMPIRE)  
SOILS AND FERTILIZERS  
METALS  
SALTS AND BRINES  
BIOCHEMICAL  
ENVIRONMENTAL BACKGROUND  
CROPS AND PLANTS  
COKES AND COALS  
WATERS AND EFFLUENTS  
GASES

January 10, 1972

U. S. Organic Ferto Corp.  
c/o Mr. Howard Turrel, Gen. Mgr.  
850 N. Main, #12  
Springville, UT 84663

Dear Mr. Turrel:

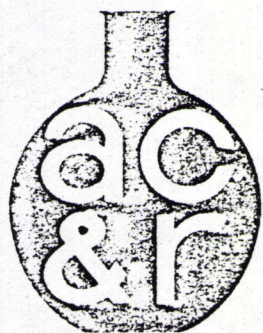
Included herewith please find our Certificate of Analysis for the mineral samples received from you on January 5, 1972.

We find traces of silver and gold and fairly promising levels of iron, zinc, and manganese. The mineralization is heavy enough in some parts of the samples to warrant additional survey work. We see some indications of uranium that should be examined further if that type of venture is of interest to you.

However, during the period from 1966-69, I was heavily involved in research and discovery on humus based fertilizers (derived from coal, lignite and leonardite beds). The coals were in general not soluble enough without harsh chemical oxidation and the leonardites were so highly soluble that they often caused uptake problems in the plants and because of their acidic nature were usually harmful.

The lignite materials proved to be very effective soil conditioners by themselves and excellent fertilizers when ad-mixed with primary plant nutrients (N, P & K).

The mineral samples you submitted to AC & R are of good quality lignite. The organic matter concentration averages above 65% by weight and is rich in both the secondary plant nutrients (Mg, Ca & S) and the trace elements (B, Cu, Fe, Mn, Mo. and Zn).



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Chemical



Research  
Laboratories

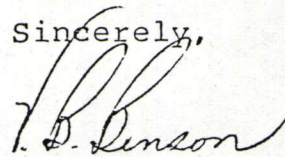


O We recommend that you seriously investigate the possibilities of using your materials in the agricultural fertilizer market. I am convinced that the fertilizer market in the future will be dominated by humus and mineral based materials similar to the samples you submitted to us for analysis.

It may be possible to combine some mineral extraction with a humus or fertilizer operation if the economic situation warrants it at some time in the future. We would suggest that you monitor the mineral content of the several veins periodically if you mine the humus so that you will know when to attempt extraction. Request an emission spectrographic or x-ray fluorescence analysis on a full semi-quantitative spectrum when you send in samples.

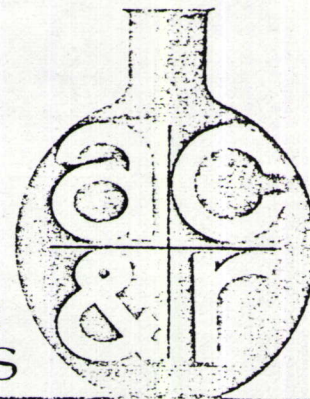
Thank you for your patronage.

Sincerely,

A handwritten signature in dark ink, appearing to read "V. B. Benson". The signature is fluid and cursive, with the first name "V." and last name "Benson" clearly distinguishable.

V. B. Benson  
President





U. S. Organic Ferto Corp.

CERTIFICATE OF ANALYSIS

1/10/72

American  
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LaboratoriesDETERMINATIONWt. %

1. Aluminum	Al	0.60
2. Boron	B	0.0005
3. Bicarbonate	HCO <sub>3</sub>	0.0029
4. Calcium	Ca	2.78
5. Carbonate	CO <sub>3</sub>	0.0031
6. Chromium	Cr	0.08
7. Copper	Cu	0.0027
8. Gold	Au	0.001
9. Iron	Fe	2.13
10. Magnesium	Mg	0.41
11. Manganese	Mn	0.20
12. Molybdenum	Mo	0.01
13. Nitrogen	N	1.20
14. Organic Matter		65.4
15. pH		5.2
16. Phosphorus	P	0.19
17. Potassium	K	0.22
18. Silver	Ag	0.001
19. Sodium	Na	0.0061
20. Strontium	Sr	0.26
21. Water	H <sub>2</sub> O	7.0
22. Zinc	Zn	0.09

Thank you for your patronage.

Sincerely,

V. B. Benson  
President



GEOCHEMICAL EXPLORATION  
POLLUTION ANALYSIS (UMPIRE)  
SOILS AND FERTILIZERS  
METALS  
SALTS AND BRINES  
BIOCHEMICAL  
ENVIRONMENTAL BACKGROUND  
CROPS AND PLANTS  
COKES AND COALS  
WATERS AND EFFLUENTS  
GASES

June 12, 1977

U. S. Ferto Corp.  
c/o Mr. Howard Turrel, Gen. Mgr.  
P. O. Box 111  
Spanish Fork, UT 84660

Dear Mr. Turrel:

As per your instruction, we have again analyzed the material that you mined in Sanpete County.

I am impressed with the quality of the product, especially the prellled humus and mineral.

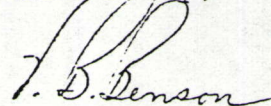
As I look back on our association over the last five years, I feel that the decision to advise you to pursue the agricultural market was a good one.

We have analyzed the mined ore and strongly recommend that it stay in the agricultural market. We find a number of other valuable elements in the ore. We do not want to discourage any research on your part to someday extract these elements before using the humus for agriculture. We do, however, feel that U. S. Ferto should spend the majority of time and funds to further produce a good humus and mineral fertilizer for agriculture.

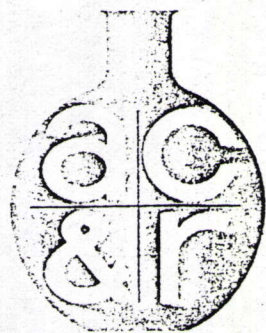
As you know, we are most interested in the agriculture field of humus and mineral. It is our desire to work with you on any product or future programs that you are engaged in.

Thank you for your patronage.

Sincerely,



V. B. Benson  
President



American  
Chemical



Research  
Laboratories



### MINING AREA

The mining is programmed to keep the mining operation in a specific area. The mining area as shown on page 13 is at the western end of the mineral deposit. The extraction of minerals will work eastward from top to bottom. In this manner, the mine can be supervised and maintained more easily. The grading and finishing of the mined area will take place as it becomes mined out. In using the plateau open pit mining method, it is an easy process to retain a well graded area during and after the area is mined. The graded area will then be seeded and planted with pine seedlings.



### OVERBURDEN

There is from 5% to 8% of overburden covering the mineral ore to be mined. The overburden consists of limestone and sand rock. The majority of overburden, between 3% and 6%, is mixed in the mined mineral and shipped to the plant. The remaining 2% is disposed of to correct eroded areas caused by years of wind and water.

There is not a great deal of vegetation growing on the mineral deposit and this is due to the sand and limestone. The overburden is useful to correct erosion and correct some possible flash flooding. These areas will be seeded and planted with seedlings as they are filled and graded.



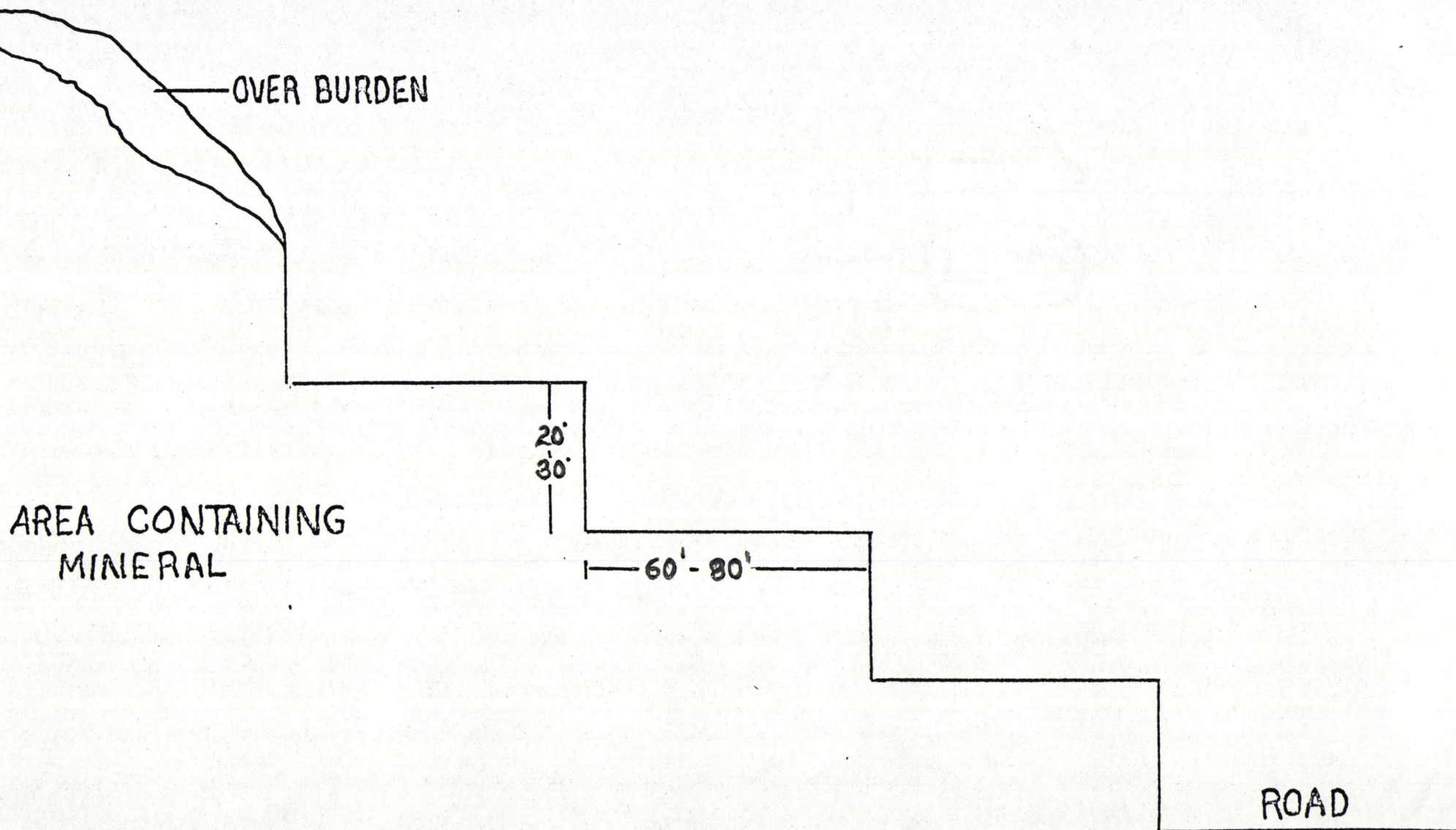
## MINING OPERATION

The mineral ore is mined under the direction of the Industrial Commission of Utah, Metal-Mine Division. The safety procedures, operation of equipment used and mining programs are also directed by the commission. The mineral ore is mined open pit using the step or plateau system. The plateaus are mined or programmed into the side of the mineral deposit, one above the other as shown in the diagram on page 13. The plateaus when finished will average 60 to 80 feet wide and 20 to 30 feet high at the inside. The plateaus become the open pit mine and are worked down one at a time starting at the top. The plateaus are mined with a crawler bulldozer pushing the mined mineral to one end of the plateau where it is loaded into trucks using an end loader. The mineral is soft enough that no drilling or blasting has been required nor is it required to remove the overburden.

The plateaus begin as roads and then are worked into the open pit mining plateaus. These plateaus are gradually widened until they are fully productive.



# PLATEAU MINING ○



THE MINE IS BEING DEVELOPED USING THE PLATEAU SYSTEM OF OPEN PIT MINING, AS SHOWN ABOVE.



## MINING EQUIPMENT

The mining is accomplished with the use of one and sometimes two D-8 or D-9 size crawler bulldozer diesel tractors. These tractors are used to scrape the ore and keep the mined area in a grade. They are also used to grade the road system.

The loading of the mined ore is completed with the use of one five yard diesel rubber tire loader. The ore is transferred from the area with 5 and 10 yard dump trucks.

The use of pickup trucks are for transportation to and from the mine area. There are no buildings, bridges, cable cars or other type structures permanent or temporary erected on the mining property.



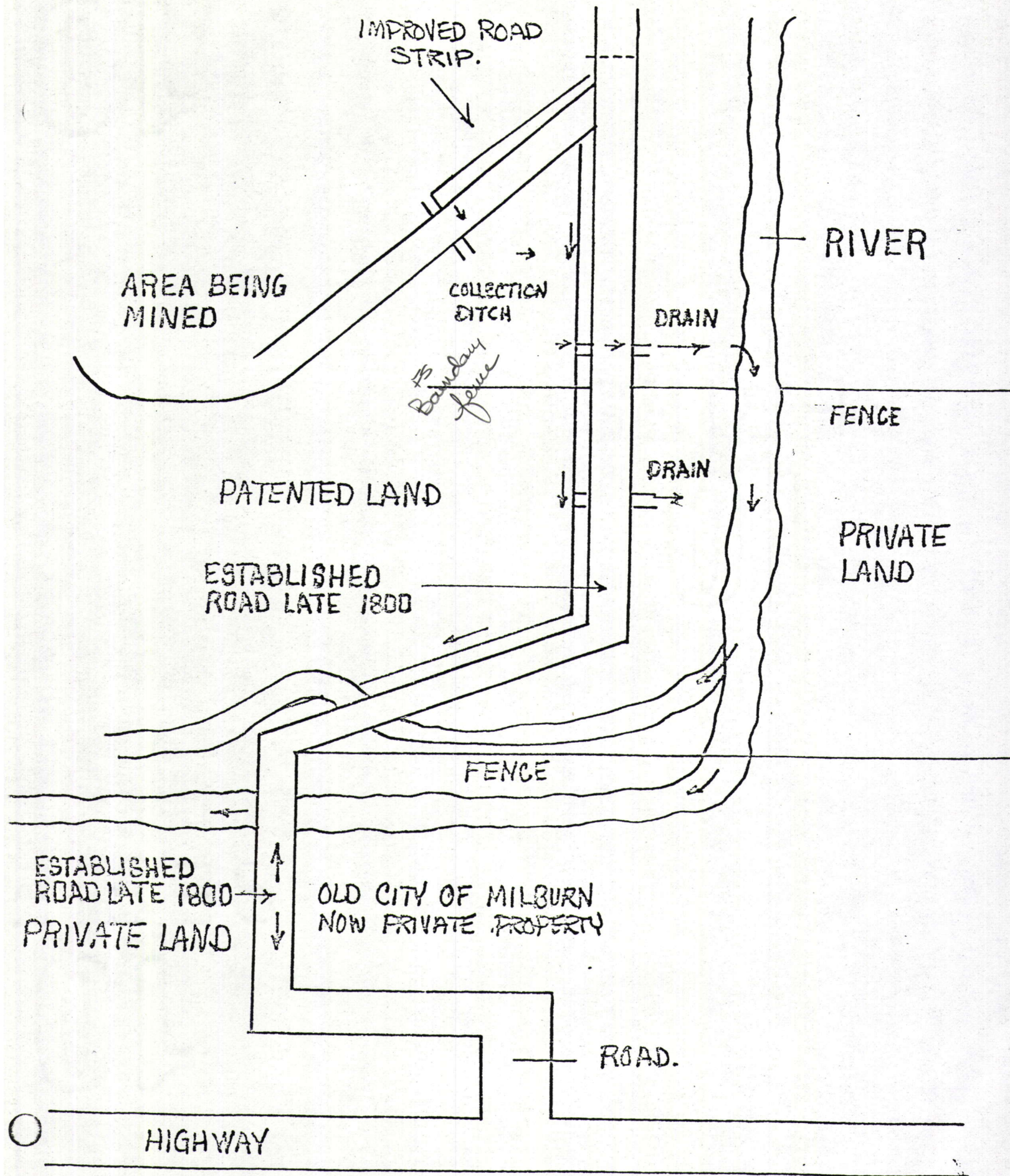
TONS MINED AND FUTURE PROJECTION

There are records of the tons mined starting in 1972, the date that the present owners assumed responsibility and ownership of the mines.

1972	500	tons
1973	1,500	"
1974	3,500	"
1975	5,000	"
1976	5,000	"
1977	7,000	" estimated

It is projected that the mined tonnage will increase 3,000 tons per year from 1978 through 1981. This would be a total of 19,000 tons per year which is 1,000 tons greater than the plant capacity.





PLAN OF IMPROVED ROAD AND WATER DRAIN SYSTEM.



## ROADS

What is called the main road was established sometime in the late 1800's. It was built by towns people, the county and state. It was first used as a sheep trail and later improved for the use of horse drawn wagons. The wagons were used to bring timber and coal from the sky line area to the towns of Milburn and Fairview. In the early 1900's, a flash flood destroyed the town of Milburn and much of the road, however the road was soon rebuilt. The road was used less after the flood and soon thereafter another road was opened up in Fairview canyon. The road slowly deteriorated until 1930 when the U. S. Government again improved the road. It was again used for the transfer of coal, wood, sheep, cattle, equipment and by the valley farmers. The condition has went from excellent to very poor as no person, company or agency has the responsibility to maintain it. The people using the road kept it in condition for their purpose during the periods they used it. In the late 60's, the road was almost impassable except by horse. In 1971, the road was again improved by the owners of the mine that are the subject of this report. The improvement included such items as improved drainage using steel culverts in place of ditches that had eroded, and side bar ditches to collect runoff water to the under road steel culverts. The road was widened for safety and graded for easier travel. The areas that had eroded were filled with stone and rebuilt to grade. (see page 15A)

The road begins at the hard surface road where Milburn was located on the west and runs east ending at what is called Sky Line (see page 15A). It is the only road to and from the forest and mine area. It is also the only road for sheep, cattle and control of the forest service or fire fighters. The future plans call for the road to be graveled under the supervision of Sanpete County.

The operators of the mine will furnish the gravel and equipment to keep the road in condition. There has and is much work done each year in maintaining the road and areas where the road passes through. The water runoff is also maintained so no erosion will take place.



## WATER RUNOFF

The rain and snow water ran rampid in the mine area before the area was mined. There was no vegetation to slow it down or help absorb it. The area is known for flash flooding and in the early 1900's, a flash flood destroyed the town of Milburn which was established at the bottom of the canyon. In 1972, the present owners in conjunction with the mining commission engineered the plateau mining system. The system of mining helps retain the water and slows the runoff. It lets the water soak into the ground instead of running rampid down the sides. It is a common procedure to use the plateau system where water runoff is a problem. A number of state and government agencies use this system where water presents runoff problems. The same system is incorporated into the mining operation, only in a much larger form. This system tends to keep the flow of water steady instead of eratic.

There was extensive work completed on the road system to retain water runoff and keep the flow in proper channels. The use of drain pipes were installed where water would cross the road or run down the road causing extensive erosion problems.



## RECLAMATION PROGRAM

The program of Reclamation is one of present and future. The present includes such items as excess overburden, erosion areas, water runoff, roads and grading. It is somewhat of a continuous program to maintain and fill the old eroded areas. This is being accomplished by using the remaining overburden. There is continuing work and supervision going into water runoff as this has caused much erosion in many areas where no mining is or has been done. These areas are being filled as overburden becomes available.

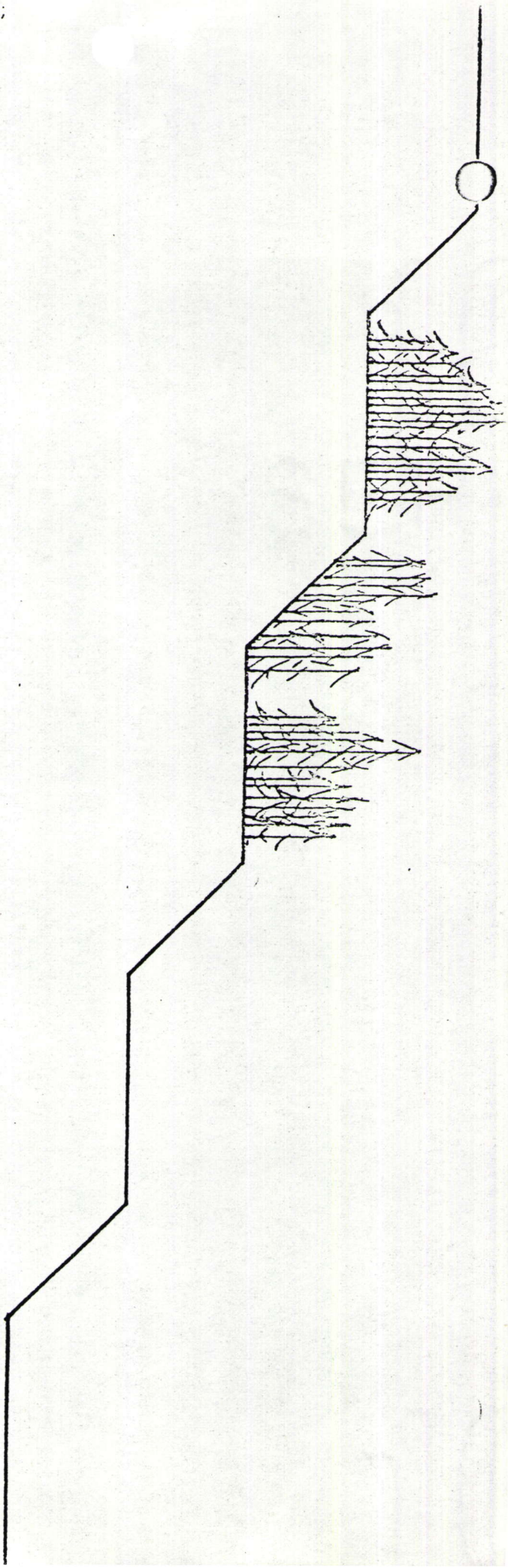
The area being mined will be graded so it will reflect the best grade conditions that are possible. The mined out area will be seeded with grass and seedlings planted in the areas that will support vegetation life. It should be noted that the majority of the mineral deposit areas do not support any vegetation at this time. The surface, or what is called overburden, is mostly sandstone. The ore outcrop areas are a shale type material. There is very little vegetation growing in these areas.

The plateau mining system that is being used should help support vegetation as it will tend to stop erosion and retain moisture for longer periods. This system also helps to support wildlife and make areas more useful for people. These areas will be graded with some slope prior to being seeded and planted with trees. The area is being mined from west to east and the grading, seeding and planting will be completed as the areas are mined out in the same manner west to east.

All roads except for the main road will become part of the plateau mining system. There is no mining anticipated below what is referred to as the main road.

The seedlings will be the same type as the trees that grow in the area. The seeding and planting will be completed with the help of the forest service and State of Utah Department of Natural Resources. The operators have filed their reclamation program with the State of Utah Department of Natural Resources.





Reclamation Program when one has been mined out.  
Trees and grass to be planted where growth is possible.



## CONCLUSION

It is possible that with time we could make some changes in our plans. We have tried to leave enough room for changes as they come. It is a fact that as you work and gain hindsight, it should help produce foresight. It is our desire to improve on all the programs outlined in this report. We encourage the advice and help of all agencies and people involved that have something to contribute. We sincerely believe that the natural resource of this country should be put to the best use for the people of this country.

It is our belief that any area that is upset by the removal of natural minerals should not be left in a state of depression. It should also be recognized that it is impossible to return mined areas to their original state and landscape. It is possible, however, to level, grade, replant and generally make the areas look neat and respectable. It is our intention to do all that is possible for reclamation of the mined areas in a economical way.